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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,979	01/22/2004	George Hradil	81394-499	7882

28765 7590 11/09/2005

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EXAMINER

WONG, EDNA

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/763,979

Applicant(s)

HRADIL, GEORGE

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date January 22, 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Specification

I. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

II. The disclosure is objected to because of the following informalities:

page 1, line 4, the words -- now abandoned -- should be inserted after the year "2002".

page 12, line 14, the words "claim 1" should be deleted because it is improper for the specification to refer to the claims.

page 13, line 4, the word "4"barrell" should be amended to the words -- 4" barrel -

page 14, line 6, the word "4"barrell" should be amended to the words -- 4" barrel -

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Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims **1-20** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

line 9, "the metal" lacks antecedent basis. See also claim 1, line 10; and claim 4, line 1.

Claim 13

line 14, "the ... metal ion" lacks antecedent basis.

Claim 16

line 1, "the stannous ion" lacks antecedent basis.

Claim 18

line 1, "the conductivity salt" lacks antecedent basis.

line 2, "the surfactant" lacks antecedent basis.

Claim 19

lines 3-4, "the substrate" (singular) lacks antecedent basis. Claim 19, line 2, recites that "*a plurality of such substrates*" is contacted with the solution of claim 1. Thus, it appears that the metal electrodeposits are provided on the plurality of such substrates.

line 5, it appears that the "electroplating" is the same as that recited in claim 19, line 1. However, it is unclear if it is. If it is, then it is suggested that the word -- the -- be inserted *before* the word "electroplating".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Solution

I. Claims **1-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 2-301588 ('588)**.

DE '588 teaches a solution for use in connection with the deposition of one or

more metals on electroplatable substrates, which comprises:

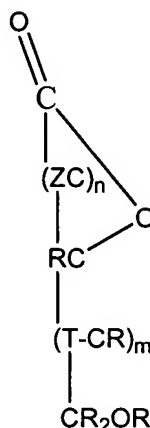
(a) water;

(b) a metal ion (page 2, line 42 to page 3, line 4) in an amount (= in the range of 0.5~200 g/l) [page 3, line 5-6] sufficient to provide a metal deposit (= metal tin, lead, tin-lead alloy or the combination of metals of the corresponding film deposit) on a platable substrate (= to plate any parts that can be electrically plated) [page 4, lines 31-35];

(c) a complexing agent (= complexers) of an organic compound having between 4 and 18 carbon atoms which compound includes at least two hydroxyl groups and a five or six membered ring that contains at least one oxygen atom (page 3, lines 7-11), with the compound being present in an amount (= in the range of 3~800 g/l) [page 3, lines 12-13] sufficient to complex the metal to render it soluble in the solution and to inhibit oxidation of the metal; and

(d) a pH of the solution in the range of between 3.5 and 5.5 (= pH 2~9) [page 4, lines 13-15], adjusted, if necessary, by the addition of a suitable pH adjusting agent (= pH buffer) [page 3, lines 25-29].

The complexing agent has the structure:



wherein each R is the same or different and is hydrogen or a lower alkyl group of 1 to 3 carbon atoms, T is R, OR, or $\text{O}=\text{P}(\text{OR})_2$, Z is $\text{O}=\text{}$ or $\text{RO}-$, n is 2-4 and Z can be the same or different in each occurrence in the compound, and m is 1-3 (= ascorbic acid, 2-ketogluconic acid, and glucuronic acid) [page 3, lines 7-11].

The complexing is ascorbic acid, isoascorbic acid, dehydroascorbic acid, glucoascorbic acid, galacturonic acid, glucuronic acid, or a salt thereof, or is derived from a ketogluconate or heptagluconate (= ascorbic acid, 2-ketogluconic acid, glucuronic acid) [page 3, lines 7-11] and is present in an amount of about 25 to 200 g/l (= in the range of 3~800 g/l) [page 3, lines 12-13].

The metal is tin and is added to the solution as a stannous alkyl sulfonate salt, a stannous sulfate salt, a stannous chloride salt, a stannous ascorbate salt, or stannous oxide (= tin sulfate, tin chloride, tin methane sulfonate, tin oxide) [page 2, line 42 to page 3, line 4] and is present in an amount of between about 5 and 100 g/l (= in the range of 0.5~200 g/l) [page 3, line 5-6].

The solution further comprises a divalent lead salt (page 3, lines 3-4) in an

amount sufficient to deposit a tin-lead alloy from the solution (= in the range of 0.5~200 g/l) [page 3, line 5-6; and page 4, lines 31-32].

The solution further comprises a conductivity salt a conductivity salt (page 3, lines 19-23) in an amount (= 0~800 g/l) [page 3, lines 23-24] sufficient to increase the conductivity of the solution.

The conductivity salt is an alkali or alkaline metal sulfate, sulfonate, or acetate compound (= sodium sulfate) [page 3, lines 19-21].

The solution further comprises a surfactant in an amount (= 0.01~30 g/l) [page 3, lines 41-43] sufficient to enhance deposit quality and grain structure.

The surfactant is an alkylene oxide condensation compound (page 3, lines 33-38) and is present in an amount of about 0.01 to 20 g/l (= 0.01~30 g/l) [page 3, lines 41-43].

The substrates are composite articles having electroplatable and non-electroplatable portions (= metal/ceramic and metal/glass composite substrates) [page 4, lines 33-35], the pH adjusting agent is an acid or a base (page 3, lines 25-29) and the pH is adjusted to the range of about 3.5 to 5.5 (= pH 2~9) [page 4, lines 13-15] to enable electroplating of the electroplatable portions of the articles without deleteriously affecting the non-electroplatable portions.

The method of JP '588 differs from the instant invention because JP '588 does not disclose the following:

a. Wherein the complexing agent and metal ion are present in a concentration ratio of between about 2:1 and 9:1 to reduce or minimize agglomeration of the substances during electroplating, recited in claim 1.

JP '588 teaches that the tin and lead ion concentration can be selectively arbitrarily, normally in the range of 0.5~200 g/l, but preferably in the range of 1~100 g/l (page 3, lines 5-6). The complexers addition quantity may vary but normally in the range of 3~800 g/l, and preferably in 40~g/l (page 3, lines 12-13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the concentration ratio of the complexing agent and metal ion described by JP '588 with wherein the complexing agent and metal ion are present in a concentration ratio of between about 2:1 and 9:1 because one having ordinary skill in the art would have adjusted the concentration ratio of the complexing agent and metal to maintain the tin and lead metals in solution at the preferred pH values. Thus, the concentration ratio of the complexing agent and metal ion is a result-effective variable and one skilled in the art has the skill to calculate the concentration ratio that would have determined the success of the desired reaction to occur, i.e., to maintain the tin and lead metals in solution at the preferred pH values, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(II)(B).

JP '588 teaches 10 g/l stannous methane sulfonate and 100 g/l ascorbic acid (page 4, Example 1); and 10 g/l stannous methane sulfonate and 200 g/l dehydro ascorbic acid (page 5, Example 2).

As to reducing or minimizing agglomeration of the substances during electroplating, the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), *cert. denied*, 500 US 904 (1991); and MPEP § 2144.

b. Wherein the solution further comprises an agent to promote anodic dissolution, as recited in claim 10.

c. Wherein the agent to promote anode dissolution is as potassium methane sulfonate, ammonium chloride or a metal sulfide salt, as recited in claim 11.

JP '588 teaches ammonium chloride as a conductive salt (page 3, lines 19-21).

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention because the Applicant has a different reason for, or advantage resulting from doing what the prior art relied upon has suggested, it is noted that it is well settled that this is not demonstrative of nonobviousness. *In re Kronig* 190 USPQ 425, 428 (CCPA 1976); *In re Linter* 173 USPQ 560 (CCPA 1972); the prior art motivation or advantage may be different than that of Applicants while still supporting a conclusion of obviousness. *In re Wiseman* 201 USPQ 658 (CCPA 1979); *Ex parte Obiaya* 227 USPQ 58 (Bd. of App. 1985) and MPEP § 2144.

Method

II. Claim **19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 2-301588** ('588) as applied to claims 1-12 above.

JP '588 is as applied for the reasons above and incorporated herein.

JP '588 also teaches a method for electroplating a metal deposit on a substrate which comprises:

(a) contacting a plurality of such substrates (= barrel plating) [page 4, lines 22-23] with the solution of claim 1; and

(b) passing a current (= $0.001\sim 30\text{ A/dm}^2$) through the solution to provide metal electrodeposits on the substrates (page 4, lines 22-35) without causing significant agglomeration of such substrates during electroplating (*inherent*).

Solution

III. Claims **13-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 2-301588** ('588).

JP '588 is as applied for the reasons as discussed above and incorporated herein.

JP '588 also teaches a stannous ascorbate compound (= complex of tin ion source + ascorbic acid) [page 2, line 42 to page 3, line 4; and page 3, line 7-11].

Method

IV. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2-301588 ('588) as applied to claims 13-18 above.

JP '588 is as applied for the reasons as discussed above and incorporated herein.

JP '588 also teaches a method for electroplating a tin or tin-lead deposit on a composite article that includes electroplatable and non-electroplatable portions (= metal/ceramic and metal/glass composite substrates) [page 4, lines 33-35] which comprises:

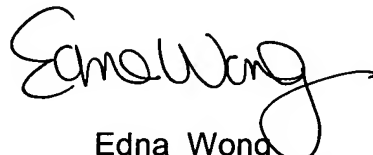
(a) contacting a plurality of such articles (= barrel plating) [page 4, lines 22-23] with the solution of claim 13; and

(b) passing a current (= $0.001\sim 30\text{ A/dm}^2$) through the solution to provide tin or tin-lead electrodeposits on the electroplatable portions of the articles (page 4, lines 22-35) without deleteriously affecting the non-electroplatable portions of the articles (*inherent*).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Edna Wong
Primary Examiner
Art Unit 1753

EW
November 3, 2005